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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/816,294	03/31/2004	David J. Seagle	K35R1871	8577

35219 7590 11/07/2006

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EXAMINER

CHEN, TIANJIE

ART UNIT PAPER NUMBER

2627

DATE MAILED: 11/07/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/816,294

Applicant(s)

SEAGLE, DAVID J.

Examiner

Tianjie Chen

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 25 September 2006.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-45 is/are pending in the application.
- 4a) Of the above claim(s) 40-44 is/are withdrawn from consideration.
- 5) ☒ Claim(s) 1-39 is/are allowed.
- 6) ☒ Claim(s) 45 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

Non-Final Rejection

Election/Restrictions

1. Applicant's election without traverse of Group I claims 1-39 and 45 in the reply filed on 09/25/2006 is acknowledged.

Specification

2. The disclosure is objected to because of the following informalities:

- In [002], line 7; the half of the quotation mark should be deleted.

Appropriate correction is required.

Claim Objections

3. Claim 14 is objected to because of the following informalities:

- In claim 14, line 2; "maganese" should be change to --manganese--.

Appropriate correction is required.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claim 45 is rejected under 35 U.S.C. 103(a) as being unpatentable over Hasagawa et al (US 2004/0106012).

Claim 45, Hasagawa et al shows a magnetoresistive read head in Fig. 1 including: a first shield layer 20 ([0081]); a first gap layer 21 over the first shield layer; a spin-valve stack over the first gap layer, the spin-valve stack including: a seed layer 22 over the first gap layer; an antiferromagnetic layer 23 over the seed layer; a pinned

layer 24 over the antiferromagnetic layer; and a free layer 26 over the pinned layer and over a first portion D of the antiferromagnetic layer; and a bias structure 35 over a second portion C of the antiferromagnetic layer.

Hasagawa's device has same layer structure as Applicant's structure as described; therefore, Hasagawa's device should have same magnetic potential as Applicant's device, i.e. the seed layer has a magnetostatic potential substantially equal to the magnetostatic potential of the first shield layer.

Allowable Subject Matter

5. Claims 1-39 allowed.

The following is an examiner's statement of reasons for allowance:

- With regard to independent claim 1, as the closest reference on record, Hasagawa et al (US 2004/0106012) shows a magnetoresistive read sensor in Fig. 1 including: a first shield layer; a first gap layer over the first shield layer, a spin-valve stack over the first gap layer, the spin-valve stack including: a seed layer over the first gap layer, an antiferromagnetic layer over the seed layer; and a free layer over a first portion of the antiferromagnetic layer; and a bias structure adjacent to the free layer, the bias structure located over a second portion of the ferromagnetic layer and isolated from the seed layer by the second portion; **but fails to show** that at least a portion of the seed layer including a **soft-magnetic** material NiFeCr; an antiferromagnetic layer over the seed layer, the antiferromagnetic layer magnetically **decoupled** from the seed layer. Applicant asserts in p. 6 that in his invention the read sensor 10 comprises an exchange break layer 84 between the antiferromagnetic layer 44 and the seed layer 42, as schematically illustrated by Figure 2, which "magnetically decouples the

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antiferromagnetic layer 44 from the seed layer 42 by "breaking" or reducing the exchange coupling between the two layers. Hasagawa et al does not show the exchange break layer.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

Conclusion

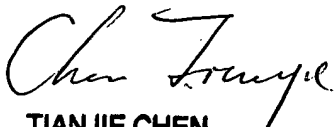
The prior art made of record in PTO-892 Form and not relied upon is considered pertinent to applicant's disclosure.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Tianjie Chen whose telephone number is 571 272 7570. The examiner can normally be reached on 8:00-4:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Nguyen Hoa can be reached on 571 272 7579. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.


TIANJIE CHEN
PRIMARY EXAMINER